



# **Blast Effects and Mitigation**

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**Advanced Planning Briefing For Industry**

**February 21, 2006**

**Technical Support Working Group**

**Combating Terrorism Technology Support  
Office (CTTSO)**



# Mission

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**Identify, prioritize and execute research and development projects that satisfy interagency and international requirements to define and mitigate the potential damage to structures, critical infrastructure and humans from conventional and enhanced explosive mixtures.**



# Subgroup Membership

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**Department of Defense:** AFRL, CoE ERDC, CoE PDC, CENTCOM, DIA, DTRA, NAVFAC, USMC

**Department of Justice:** BATF

**Department of State:** DSS

**Department of Homeland Security:** TSA, USSS

**Department of Transportation:** FHA, FRA

**Department of the Interior:** OLES, USBR, USGS

**Other Agencies:** AAR, Amtrak, CALTRANS, Chicago Transit Authority, CIA, Golden Gate Bridge Highway and Transportation District, NIST, NYPD-CT, PANYNJ



# 2005 Success Story: Blast Wall

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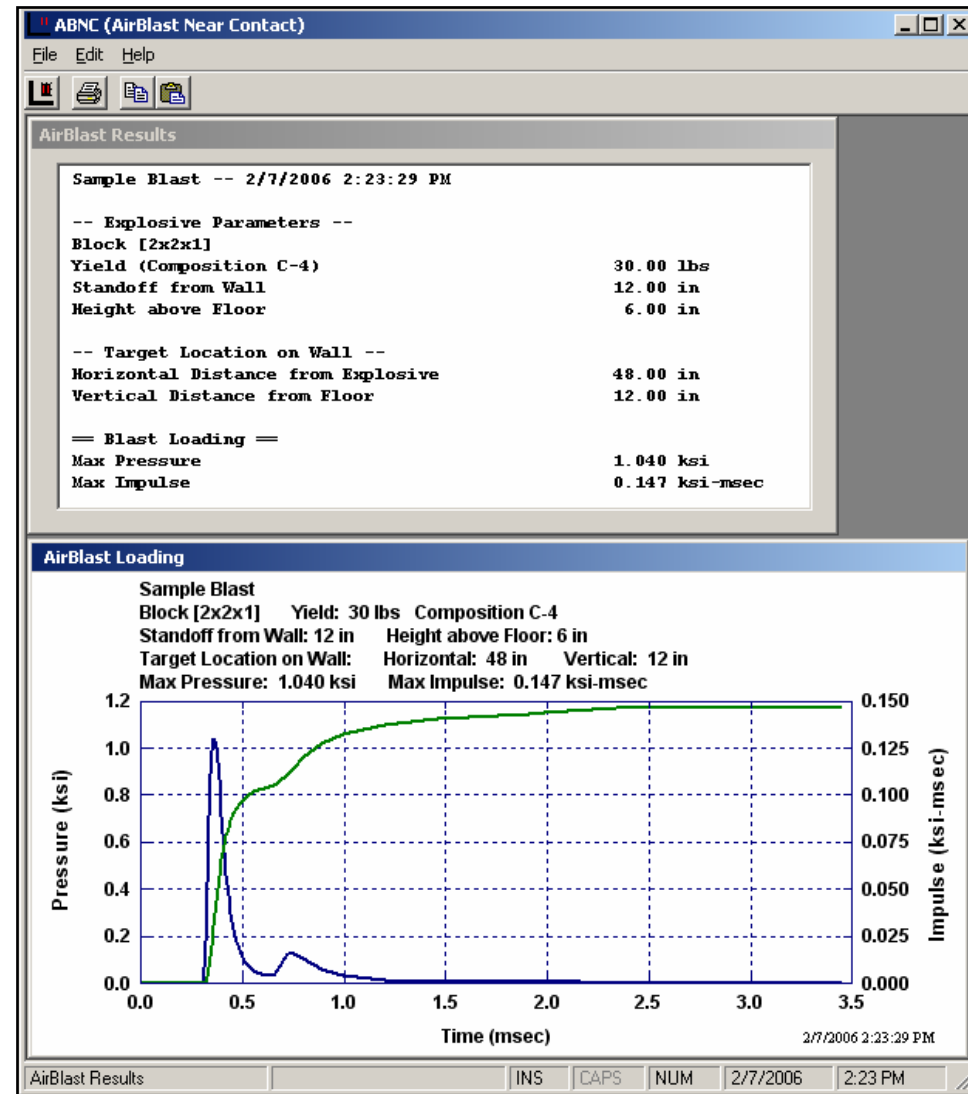
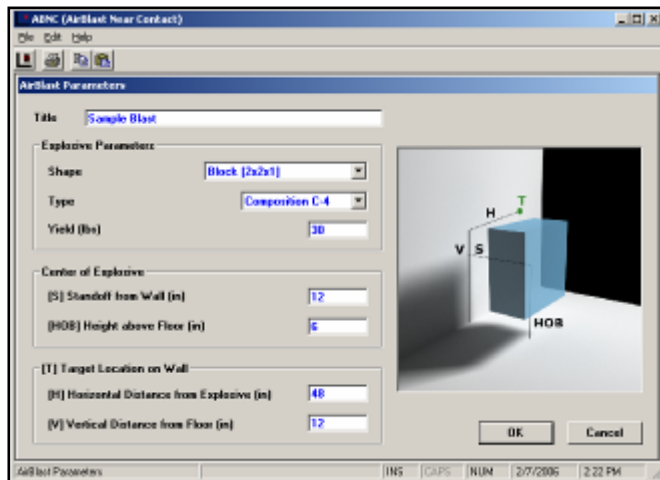
- Load bearing cementitious wood chip composite used as original construction or retrofit, capable of reflected pressures in excess of 750 psi and reflected impulse of 750 psi-msec
- Technology report currently in draft for Unified Facilities Criteria





# 2005 Success Story: AirBlast Near Contact Tool

- Software tool designed to provide near contact blast environments
- Beta version nearly completed
- Software to be released in 2006





# 2005 Success Story: COTS Testing Program

**Designed to test commercially available products for blast mitigation capability**

- **14 products tested to date, 8 passed**

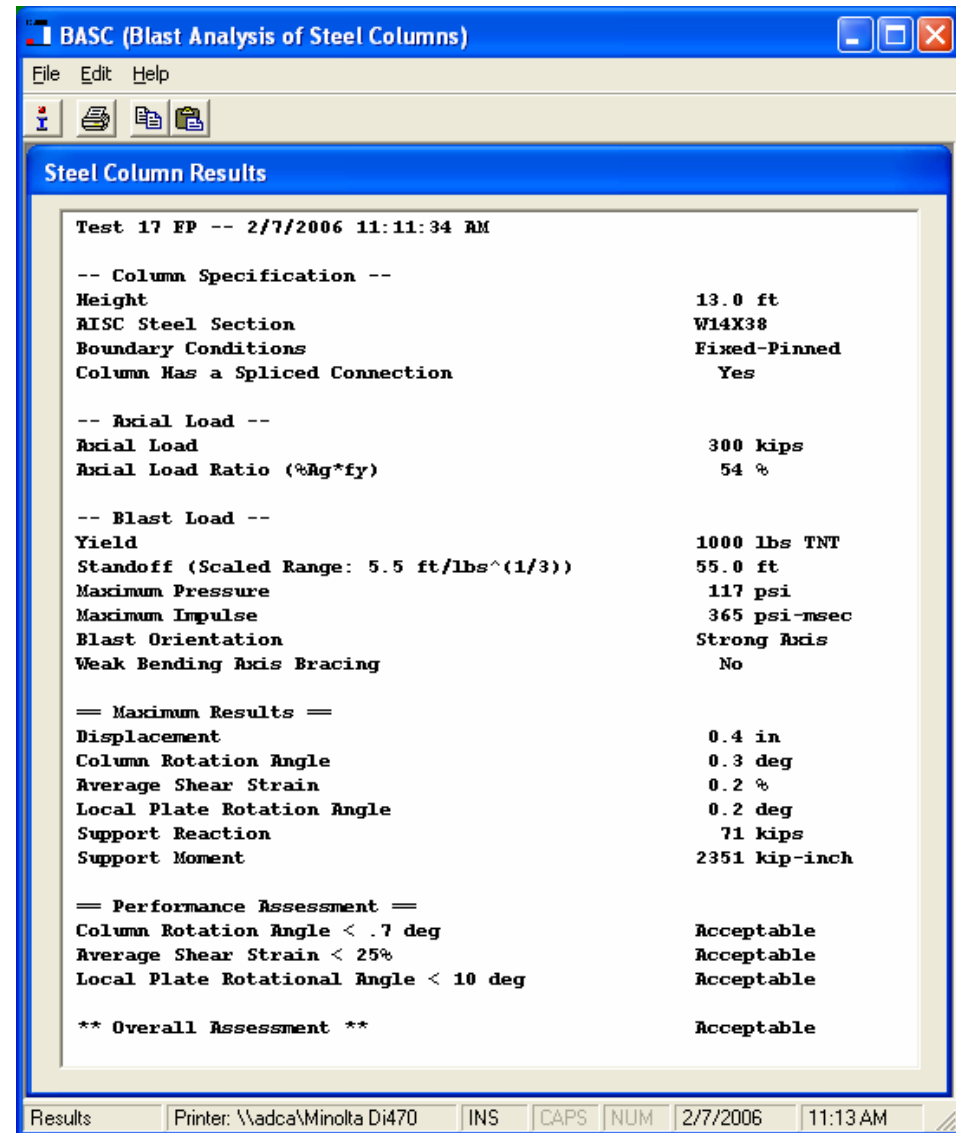
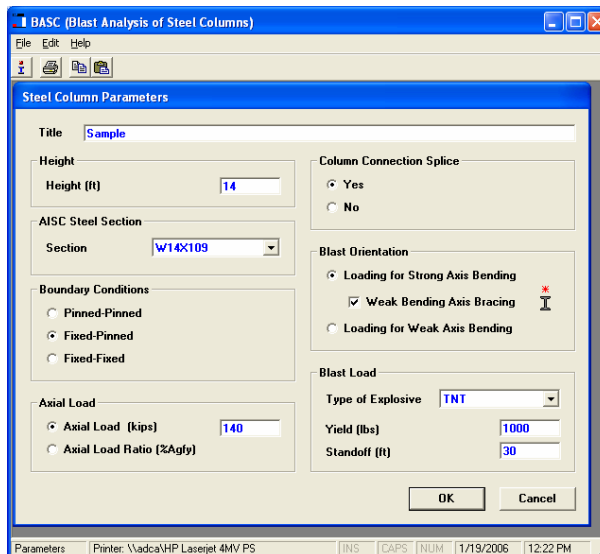






# 2005 Success Story: Steel Column Tool

- Engineering software tool to determine damage on steel columns subjected to contact explosive charges
- Beta version completed
- Software to be released in 2006





# FY2006 Requirements

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- **R-2190 Blast and Fragmentation Resistant Construction**
- **R-2194 Advanced Polymer Application**
- **R-2195 Pipeline Blast Mitigation**





# **R-2190 Blast and Fragmentation Resistant Construction**

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**Design expeditionary construction method for blast and fragment resistant structures.**

- **Must be air-transportable**
- **Material with high strength and ductility for blast resistance**
- **Allow for windows and doors (modular construction)**



# R-2194 Advanced Polymer Application

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**Design and validate a method to apply polymer coatings to a variety of conventionally constructed facilities (including wood, concrete, Concrete Masonry Unit (CMU), etc.) with equipment that is:**

- **Lightweight (less than 150-pounds and is easily transportable)**
- **Rugged**
- **Inexpensive**



# **R-2195 Pipeline Blast Mitigation**

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**Mitigate damage to natural gas and oil pipelines caused by explosive devices**

- **Backpack devices to vehicle borne IEDs**
- **24 - 48-inch diameter pipeline**
- **Threat is to pipelines and valve stations**



# Subgroup Contact Information

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**BAA Specific Questions:**

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# QUESTIONS?